subLOGIC Scenery Disk

Database Design by Michael Woodley

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First Edition
First Printing
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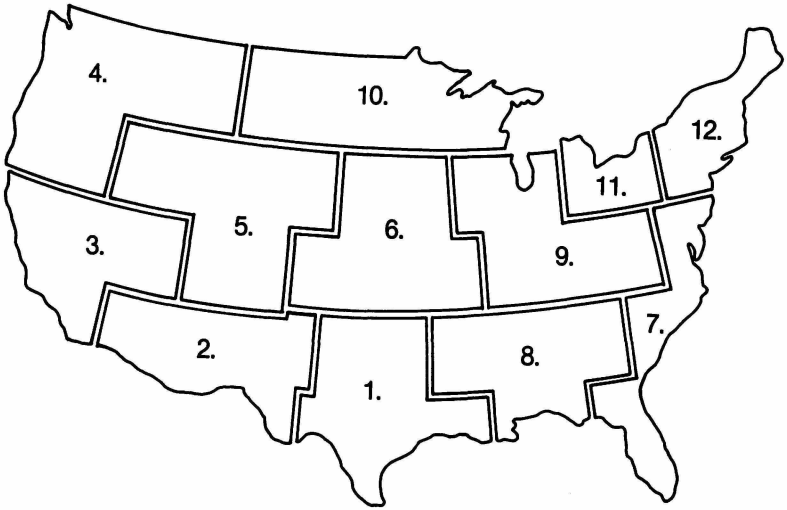
Introduction

SubLOGIC Scenery Disks are an enhancement designed to expand the potential flying environment of Flight Simulator II and other SubLOGIC flight simulation programs. You must have Flight Simulator II, Microsoft Flight Simulator, or Jet in order to use a Scenery Disk.

Twelve separate Scenery Disks covering the entire continental United States were developed using NOAA (National Oceanic and Atmospheric Administration) Sectional Aeronautical Charts and Airport/Facility Directories. These charts divide the United States into 37 different sectionals. Each sectional includes all of the airfields and radio-navigation aids in the area covered by the chart. Sectional charts also show topographical information and obstacles that are important to aviators. Scenery Disk databases were digitized from these NOAA sectionals.

Scenery Disks include enough radio-navigation aids and visual scenery to allow the user to navigate anywhere in the sectional areas covered. A typical Scenery Disk (SD) covers three aeronautical sectionals, and includes approximately 100 airports and 100 radio-nav aids. Some SD's may have more airports and radio-nav aids, since some areas of the country are more densely populated than others. Any of these SD's are ideal for simulating cross-country flights.

SubLOGIC Scenery Disks are grouped by aeronautical sectional. Each SD covers a geographical region of the United States, generally comprised of three sectionals:



WEST

1. Dallas – Ft. Worth
   Houston
   San Antonio
   Brownsville
2. Phoenix
   Albuquerque
   El Paso
3. San Francisco
   Los Angeles
   Las Vegas
4. Klamath Falls
   Seattle
   Great Falls
5. Salt Lake City
   Cheyenne
   Denver
6. Omaha
   Wichita
   Kansas City

EAST

7. Washington
   Charlotte
   Jacksonville
   Miami
8. Memphis
   Atlanta
   New Orleans
9. Chicago
   St. Louis
   Cincinnatti
10. Billings
    Twin Cities
    Green Bay
11. Lake Huron
    Detroit
12. Halifax
    Montreal
    New York

In addition to twelve regional Scenery Disks, a number of STAR Scenery Disks are also available. A STAR Scenery Disk covers a small area with a relatively dense amount of scenery. These disks are mainly intended for visual flight (sight-seeing). They include buildings and landmarks, as well as detailed renditions of the major airports in the area.

Reading a Sectional Directory

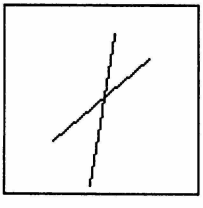
Below is a sample listing from a sectional directory with a description of the information provided. All available airports and radio-nav aids for a given sectional are listed alphabetically. Radio transmitters that border a sectional are also available on neighboring sectionals, so you can cross sectional boundaries when instrument flying.

(1)—2 - ALBUQUERQUE AND EL PASO—(2)

(3)—Alpine

(4)—12628N 10661E—(5)
(6)—alt. 4513

(7)—RWY 1-19 (8)—5999 X 72
RWY 5-23 4821 X 39



(9)—Anton Chico (VOR)—(10)

(4)—14710N 10537E—(5)
(11)—freq. 110

(9)—Artesia (NDB)—(10)

(4)—13703N 10575E—(5)
(11)—freq. 414

1 Page number
2 Sectional name
3 Airport name
4 North coordinate
5 East coordinate
6 Altitude in feet
7 Runway Designator, number
8 Runway dimensions in feet
9 Radio Aid name
10 Radio Aid type designator
11 Radio Aid frequency

Notice that the vertical sides of the airport map align with magnetic north. Magnetic north is the direction you are pointing when your magnetic compass reads 0. Each sectional map's VOR needles point toward magnetic north. The sides of the map align with true north. This is consistent with NOAA sectionals.

Using a Scenery Disk with Flight Simulator II

Load Flight Simulator II in the usual way. When the program has finished loading, enter the simulator's program editor as described in your operating manual and set the NORTH and EAST coordinates of the airport you've chosen from the directory for the region you'd like to explore (set ALTITUDE to 0). Exit the editor, remove the FSII disk and insert the appropriate Scenery Disk. Next, press CTRL E and wait for a menu to appear. This menu page lists the names of the sectionals included on the Scenery Disk. Press any key to exit, and you should find yourself at the airport you've selected. If no scenery is visible, go into radar mode and zoom out to determine your approximate location. You may be able to zoom all the way out and view the entire continental United States database, complete with rivers, highways, coastlines, and the Great Lakes. This default database display indicates that you are not within the boundaries of the sectionals included on your disk. Re-enter the program editor and double-check your coordinates, making sure that both NORTH and EAST coordinates are correct.

When you find yourself at the airport you've selected, it may be a good idea to save your position to a User Mode (see User Mode Library in the FSII Pilot's Operating Handbook). This way, if you crash, you will be returned to the selected airport. Otherwise you will be returned to a preset location (above Lake Michigan) in the default USA database.

Crossing a Sectional Boundary

When you fly over a sectional boundary, one of two things will occur. If the neighboring sectional is also included on your Scenery Disk, that sectional will load and you will have to switch to the appropriate new map and directory provided. If the neighboring sectional is not available on your disk, a common default USA database will load. This default database allows you to zoom out (in radar mode) to view the major geographical features of the United States.

If you have another Scenery Disk containing the appropriate sectional, you can switch disks and press CTRL E to log-in the new disk. After a brief load, the names of the new sectionals available on this disk will be displayed. Press any key to exit and return to Flight Simulator II.

Using a Scenery Disk with Microsoft Flight Simulator (IBM PC Versions)

Load Flight Simulator in the usual way. When you want to switch to a Scenery Disk, remove the Flight Simulator disk and insert the appropriate Scenery Disk. Press CTRL E. This will log-in the disk. A message will appear on the screen identifying the names of the sectional areas contained on the disk.

The first Scenery Disk log-in automatically checks to see if you have the most recent version of Flight Simulator. If you don't, the program updates Flight Simulator in memory. When this happens, your flight coordinates are set back to the Chicago area. This will only happen on the first Scenery Disk log-in of the session. After the first log-in, your flight coordinates and conditions will carry over as you change Scenery Disks while flying.

After logging in the first Scenery Disk, you can fly or slew through all of the scenery on the disk. You can freely exchange Scenery Disks as you fly to new areas. Press CTRL E to log-in the new area when you switch disks. If you fail to log-in a new Scenery Disk after inserting it, it will be automatically logged in when the disk is accessed. The log-in message will appear after every manual or automatic log-in.

Using the Microsoft Flight Simulator Disk as a Scenery Disk

The Flight Simulator disk contains all of the usual scenery for the Chicago, Seattle, Los Angeles, and New York areas. You can insert this disk and log it in as you would any other Scenery Disk to fly in these areas. This applies to Jet as well as Flight Simulator.

Special Note for IBM PC Flight Simulator Version 2.0

Very few copies of Version 2.0 exist. You most likely have Version 2.1, 2.10, 2.10a, 2.12, or a later version of Microsoft Flight Simulator. Look on the disk label near the serial number area, or look on the first menu page when loading Flight Simulator. If you have Version 2.0, insert the Scenery Disk and press ESC instead of CTRL E for the first log-in of the session. After this first log-in, press CTRL E as usual to log-in new Scenery Disks. Also, never re-insert the Version 2.0 disk to use the Chicago, Seattle, Los Angeles, or New York scenery; you must re-boot Version 2.0 to return to these areas. Version 2.0 also cannot be used as a Scenery Disk for Jet.

Tandy 1000/1200/2000 Flight Simulator

Scenery Disks are compatible with the Tandy 1000/1200/2000 version of Flight Simulator. With this version, always make sure to log-in a new Scenery Disk by pressing CTRL E once the disk has been inserted. No auto-load is available on this version, and failure to log-in a new disk can cause unpredictable results when the disk is accessed after an unlogged disk change.

Special Note for Compaq 286 Users

The 1.2Mbyte floppy drives in the Compaq Deskpro 286 computer cause disk-read errors when using Scenery Disks with SubLOGIC Jet or Microsoft Flight Simulator. Here is the reason why, and how to get around it:

PROBLEM - Whenever you remove a disk from the floppy drive by turning the release lever, the diskette springs out of the drive. This spring action triggers a switch in the drive that informs the disk read/write software that you have just changed the disk. The software assumes that you are about to insert a new disk, and switches to 1.2Mbyte read mode from whatever mode it happens to be in. Jet, Flight Simulator, Scenery Disks (and many other manufacturers programs) are on 360K disks, and a read error results when the Compaq 286 tries to read them as 1.2Mbyte disks.

You can verify this for yourself using the Microsoft Flight Simulator. Boot the disk, then enter and exit the editor several times (ESC key) just to see that everything is functioning properly. Then pop the disk out of the drive, re-insert it, and try to get back into the program editor. You will get a disk read error.

SOLUTION - You can avoid this problem by tricking the disk drive into thinking that you haven't changed disks. Do this by holding the disk in place with your finger while releasing the disk-release lever. DON'T LET THE DISK POP OUT OF THE DRIVE. Then manually remove the disk and insert a Scenery Disk (or Flight Simulator as scenery for Jet). The computer will never know that you changed the disk, and everything should work fine. Remember - if you let the disk pop itself out of the drive, the switch will be activated and the drive will go into 1.2Mbyte mode, thus creating errors.

Jet Users

Scenery Disks are compatible with SubLOGIC Jet. Follow the instructions in your Jet manual for loading a Scenery Disk. Jet has no automatic log-in feature, so always make sure you return to the Jet startup menu page before inserting a new Scenery disk. Changing Scenery Disks in the middle of a Jet flight can cause unpredictable results when the disk is accessed after a disk change.

Conclusion

As of this writing there are no fuel or repair facilities available on regular Scenery Disks (although they do occur on STAR Scenery Disks). To refuel, just land at an airport and enter the program editor. Your tanks will be filled and repairs will be made when you exit the editor.

We intend to periodically update and improve our Scenery Disks to include more airports, radio aids, and scenery details as recommended by users. If you know of an airport (or any other detail) that should be included on future versions of these Scenery Disks, please drop us a line and include the required information ON A SEPARATE SHEET OF PAPER (so we can store it in our files). Here's what we need to know:

Airports:	NAME, CITY, & STATE LATITUDE, LONGITUDE, & ALTITUDE HEADING, LENGTH, & WIDTH of each runway
Buildings, objects:	NAME, CITY, & STATE LATITUDE, LONGITUDE, & DIMENSIONS

Pictures and postcards are also welcome, especially aerial views. If you're unable to determine the latitude and longitude for the object or airport in question, please provide a description of where the object can be located on a map. All customer correspondence is read and answered (when appropriate). And please; remember to include any scenery suggestions or information on a SEPARATE page of your letter.

Introduction to "Western European Tour" Scenery Disk

Scenery Disk Design and Tool Development by Michael Woodley
Scenery Design by Loren Kirkwood

Maps by Michelle Maase & Ken Ruminski

"Western European Tour" includes the airports, radio nav-aids, and scenery details for large portions of Great Britain, France, and West Germany. Several airports (and a few surprises) can also be found outside the three main detailed scenery areas, along with additional radio transmitters provided to aid in long-range navigation and cross-country flight. This Scenery Disk has enough generic cross-country scenery and highly-detailed (sight-seeing) scenery areas to keep you flying for a long time. The scenery was developed using the same documentation that pilots would use to navigate these areas. The following notes and recommendations will help you to explore these new scenery areas.

Southern Great Britain

Detailed airports include Bournemouth, Cardiff, Heathrow (London), Luton, and Norwich.

City of Interest: London			
Parliament	-	18659N	13743E
Westminster Abbey			
Tower Bridge	-	18661N	13759E
Tower of London			
Buckingham Palace	-	18660N	13742E
Hyde Park with Serpentine Pond			
Post Office Tower			
St. Paul's Cathedral			
City lights at dusk and night			
Thames River			
Stonehenge Site	-	18570N	13245E
Chalk Figures (prehistoric and recent)			
Whipsnade Lion	-	18817N	13657E
Uffington White Horse	-	18743N	13369E
Westbury White Horse	-	18633N	13209E
Long Man of Wilmington	-	18365N	13788E

Lighthouse beacons along South England coast

Note to 68000 FS2 Users: After loading the Atari ST/Amiga Flight Simulator II (or Macintosh Microsoft Flight Simulator) program, you start out on Oakland Runway 27R. When you log-in the "Western European Tour" Scenery Disk you will automatically be transported to Heathrow Airport in London. You may return to Heathrow any time after this by selecting the prerecorded situation for Oakland 27R from the SITUATION menu.

Northern France

Detailed airports incude Caen, Le Touquet, Lille, and Charles de Gaulle (Paris).

City of Interest: Paris

Arc de Triomphe	-	17437N	14254E
Sacre Coeur Cathedral	-	17441N	14269E
Montmartre Hill			
Eiffel Tower	-	17430N	14254E
Tour Montparnasse	-	17423N	14261E
Concorde Obelisk	-	17433N	14261E
Louvre Museum	-	17430N	14266E
Notre Dame Cathedral	-	17426N	14269E
Ile St. Louis (island in the river)			
Seine River			
City lights at dusk and night			
Bois de Boulogne (park)			
Bois de Vincennes (park)			
Jardin du Luxembourg (park)			
Place des Invalides (park)			
Champ de Mars (park)			
Pere Lachaise Cemetery			

Southern West Germany

Detailed airports include Frankfurt and Neubiberg.

City of Interest: Munich

Olympiaturm Tower	-	17028N	16832E
Olympic Grounds (park)			
Hauptbahnhof	-	17015N	16835E
Frauenkirche	-	17014N	16839E
Residenz	-	17015N	16841E
Deutsches Museum	-	17011N	16842E
Isar River with islands			
Theresienwiese beer garden (park)			

Englischer Garten (park)
Hofgarten (park)

City of Interest: Nurnberg
Fernmeldeturm Tower - 17553N 16676E
Pegnitz River with parks

City of Interest: Stuttgart
Fernsehturm Tower - 17269N 16172E
Schlossgarten (park)
Two adjacent mountains

City of Interest: Frankfurt
Fernmeldeturm Tower - 17854N 16030E
Palmengarten (park)
Opera House - 17845N 16034E
Cathedral - 17841N 16040E
Skyline buildings
Zoologischer Garten (park)
Three mountains (northwest of city)

City of Interest: Strasbourg, France
Rhein River and canals
Jardin Botanique (park)
Orangerie (park)
Three mountains (southwest of city)

Europe

Included is a map of Europe that shows the radio aids located outside of the three main detailed scenery areas. Use these radio aids to navigate between areas.

Several additional Europe scenery details are also available. Helsinki (Finland) Airport is located at:

22508N 19462E

This airport includes refueling facilities.

The city of Moscow is also accurately located inside Russia. While we could have listed the exact city coordinates, we thought it might be more interesting for you to try and locate Moscow for yourself (see following). City scenery includes the Kremlin Wall and park, "Red Square", several other parks, a river, and several small lakes.

Nurnberg to Helsinki

It's just possible to fly from Nurnberg, West Germany to Helsinki, Finland with a full load of fuel. Start out at Nurnberg Airport:

17586N 16691E

Take off and turn to a heading of 36 degrees. Level out at 5,000 feet, then cut your airspeed to 120 knots to conserve fuel. Your magnetic compass heading will tend to drift as you fly east, so be sure to keep yourself on a constant 36-degree heading. Also, make sure to keep your airspeed at or below 120 knots; if you fly any faster than this, you will probably run out of fuel and splash into the Baltic Sea before reaching Finland!

Keep your eyes open and start scanning the horizon for Helsinki Airport as soon as you cross over into Finland. The airport is approximately 20 minutes inland from the coast and is the only scenery detail in the entire country, so it should be relatively easy to locate if you fly anywhere near it. With any luck you should be able to find and land at Helsinki Airport with about twenty minutes of fuel left in your tanks.

The flight from Nurnberg to Helsinki takes about six hours at 120 knots, gear up, flaps off, at an altitude of 5,000 feet.

Helsinki to Moscow

Your success in flying nonstop from Nurnberg all the way to Helsinki, Finland on a single tank of fuel has won you much notoriety, and strengthened your resolve to attempt an even greater feat; a secret, unauthorized solo flight from Helsinki to Moscow, deep in the Russian heartland.

After refueling your aircraft, you find yourself sitting on the runway and cleared for takeoff from Helsinki Airport at coordinates:

22508N 19462E

Take off and turn to a heading of 130 degrees. No radio nav-aid information is available for this flight, but you've determined that if you stay on this heading you should come near enough to Moscow for you to see and identify it visually. Your magnetic compass will tend to fluctuate as you fly from west to east, so make sure you maintain a 130-degree heading.

The flight from Helsinki to Moscow should take about three and one half hours at 135 knots, gear up, flaps off, at an altitude of 5,000 feet.

Find Moscow's Red Square (the Easy Way)

You've landed your airplane in a remote area of western Russia:

21739N 22124E

and have taken some time to relax and wander the countryside. Presently you arrive at a nearby village, where the friendly townsfolk inform you that you are very near Moscow and, of course, you shouldn't pass up this opportunity to see the nation's capital. The villagers assure you that the people of Moscow are very friendly and will warmly welcome someone who has made such a long flight to visit them. They also suggest that perhaps you could land in Red Square near the Kremlin.

Neither you nor they have any radio nav-aid information, but they tell you that if you take off and follow a southeast heading you should be able to spot the city on the horizon in a matter of minutes. You thank them for their hospitality and climb back into your plane to depart. The trip to Moscow from this location should take about 45 minutes at 130 knots, gear up, flaps off, at an altitude of about 5,000 feet. Good luck!

Above all else, explore! A lot of work went into this project. We hope that you enjoy the results as much as we do!

Special thanks to Dave Robins and British Airways AERAD for providing documentation used in the development of this Scenery Disk.